

Appl. No. 10/708,573
Amdt. Dated September 29, 2005
Reply to Office action of June 13, 2005

Amendments to the Claims:

This listing of claims will replace all prior versions and listings of claims in the application:

Listing of Claims:

- 1 (currently amended): A method for early warning management of at least one piece of
5 semiconductor equipment, each piece of equipment processing a plurality of
semiconductor products according to at least one corresponding process parameter,
the method comprising:
recording each process parameter for each piece of equipment;
recording processing conditions of each piece of equipment as at least one
10 corresponding equipment parameter when each piece of equipment is
processing;
evaluating and recording the quality of semiconductor products and corresponding
testing parameters after each semiconductor product has been processed; and
analyzing a relationship between the corresponding process parameter, the
15 corresponding equipment parameters, and the semiconductor product quality
for each piece of equipment; and
selectively utilizing equipment and process parameters so as to optimize the quality
and performance of processed semiconductor products.
- 20 2 (original): The method of claim 1, wherein the step of analyzing further comprises:
analyzing equipment difference of two pieces of equipment in the same process
according to the semiconductor product quality of at least two pieces of
equipment.
- 25 3 (original): The method of claim 1, wherein the step of analyzing compares the
relationship between the corresponding process parameter, the corresponding

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equipment parameters, and the semiconductor product quality of each piece of equipment using discriminate analysis.

4 (original): The method of claim 1, wherein the step of analyzing uses a two sample
5 t-test.

5 (original): The method of claim 1, wherein the step of analyzing further comprises:
using a T-test, a one-way analysis of variance (ANOVA), a two-way analysis of
variance, or box plots to analyze.
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6 (original): The method of claim 1, further comprising:
recording the corresponding process parameter, the corresponding equipment
parameters, and the analytic results in a database.

15 7 (original): The method of claim 1, further comprising:
feedback monitoring to transmit the analytic results to a user through a network or a
man-machine interface.

8 (currently amended): A system for early warning management of at least one piece of
20 semiconductor equipment, each piece of equipment processing a plurality of
semiconductor products according to at least one corresponding process parameter,
the system comprising:
a process interface module for recording each process parameter of each piece of
equipment;
25 an equipment interface module for recoding processing conditions of each piece of
equipment as at least one corresponding equipment parameter when each piece
of equipment is processing;
a quality monitor interface module for evaluating and encoding the quality of

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semiconductor products and corresponding testing parameters after each
semiconductor product has been processed; and
an analysis core module for analyzing a relationship between the corresponding
process parameter, the corresponding equipment parameters, and the
5 semiconductor product quality of each piece of equipment, and for selectively
utilizing equipment and process parameters so as to optimize the quality and
performance of processed semiconductor products.

9 (original): The system of claim 8, wherein the analysis core module analyzes equipment
10 difference of two pieces of equipment in the same process according to the
semiconductor product quality of at least two pieces of equipment.

10 (original): The system of claim 8, wherein the analysis core module compares the
relationship between the corresponding process parameter, the corresponding
15 equipment parameters, and the semiconductor product quality of each piece of
equipment using discriminate analysis.

11 (original): The system of claim 8, wherein the analysis core module uses a two sample
t-test.
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12 (original): The system of claim 8, wherein the analysis core module analyzes using a
T-test, a one-way analysis of variance, a two-way analysis of variance, or box plots.

13 (original): The system of claim 8, further comprising:
25 a database for recording the corresponding process parameter, the corresponding
equipment parameters, and the analytic results of the analysis core module.

14 (original): The system of claim 8, further comprising:

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a monitor feedback interface for transmitting the analytic results of the analysis core module to a user through a network or a man-machine interface.